

The Effect of Choice on Older Adult Preferences

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Abstract

Previous research on preferences has indicated that young adults may construct their preferences as a result of their choices. In the present study, the author investigated the effects of aging on preference construction. 80 younger adults and 80 older adults rated how desirable and important they found various vacation attributes, made a choice between two vacation options, and then rated the attributes again. Results suggest that older and younger adults show a similar pattern of preference shift to support their choice, with partial evidence suggesting that older adults shift their preferences slightly more toward the positive.

The Effect of Choice on Older Adult Preferences

In contemporary American society, we are rapidly becoming the stewards of an aging populace. By 2030, it is projected that nearly one half of American society will be above the age of 39, nearly 1 in 5 will be over 65, and that we will have more centarians than ever (US Census Bureau 2005). Understanding how we make decisions as we age is as vital a pursuit as ever, considering the ever growing body of research indicating that decision making approaches and strategies change over our life span. Studies indicate that older adults have different goals when making decisions, prefer fewer choices, attend to different stimuli and use different strategies than younger adults (Mather & Carstensten, 2005, Reed, Mikels & Simon, 2008). These age differences require greater understanding so that we can assist older adults in making optimal decisions. While this study does not address these potential policy implications, it does strive to understand what mechanisms drive these changes in decision making. As preferences often underlie decisions and decision making changes as we age, it is important to study age differences in the way preferences are formed. This study aimed to both investigate how older adults change their preferences while making a choice and how this differs from younger adults for a hypothetical choice about a vacation.

AGING AND DECISION MAKING

Vacations are just one of a myriad of things that older adults make decisions about. When older adults are making choices, like vacations, they may not be attempting to satisfy the same set of goals that younger adults do. Due to a different perspective on how much time they have remaining, they may seek to fulfill emotion regulatory goals rather than knowledge seeking ones (Mather & Carstensen 2005). Do they take a vacation to see and spend time with their family members or do they go to a place they have never been able to see before? How many different destinations would they like to choose from? How confident are they that they made the right choice? What information do they pay attention to when making their decision?

Socioemotional selectivity theory (SST; Carstensen, 2006) is a life-span theory that can shed light on these questions. The theory holds that as adults age, their outlook on the amount of time left in the future changes from being open-ended to limited. This shift subsequently leads to changes in goals from young adulthood, where people generally seek knowledge related goals, to old age, where people often strive for emotion regulatory goals. While the outlook on the amount of time remaining in life is the causal factor in SST, outlook also correlates highly with age, thus casting SST as a theory on aging. The theory therefore suggests that older adults would trend towards focusing on their emotions during a choice while younger adults would focus more on their ability to acquire novel information.

As a result of the changes in goals with age, SST suggests a phenomenon called the age-related positivity effect, which describes age-related valence differences. As older adults shift to more emotion related goals, they attend to more emotional stimuli, but especially positive, as they support an “emotionally-gratifying” state, thus satisfying their original goals (Carstensen & Mikels 2005). Younger adults seem to attend to the opposite end of the valence spectrum, attending more strongly to negative stimuli than positive in some research, or showing no bias in other research (Mather & Carstensen 2005). There is also evidence that older adults recall a greater proportion of positive than negative information, as well as attend more to positive information during the pre-choice period (Lockenhoff & Carstensen 2007). SST was supported as well in the same study when time perspective was adjusted statistically as well as when the participant’s goals were experimentally manipulated towards information gathering, both resulting in the disappearance of memory effects.

The positivity effect is important to decision making research in that it provides a mechanism to explain age differences in attention and decision making. Mather and Carstensen (2005) explain that, through the positivity effect, SST has strong implications for how we make, and remember, decisions. Since adults are already biased to attend to positive or negative

stimuli, it would follow that this influences the information they take in to make decisions. As these biases change with age, it would also stand to reason that the evaluation of their choices and decisions would change as well. This is supported by research in choice supportive memory, where Mather and Johnson (2000) explain that decisions are remembered in a more positive light after they are made if emotional cues are attended to while the decision is made. Age effects in the study also suggested that older adults, who are more emotionally focused, are more likely to remember choices more positively than younger adults. These memories could certainly effect later decisions in the form of altered preferences. A 2007 study by Henkel & Mather indicates that these misrememberences are attributable to later biases, and not ones held at the time of the choice. As a result, it seems that our biases are altered by the choice, and since preferences are personal biases influencing choice, it could be inferred that our choices effect our preferences.

One clear preference change with age is the amount of choice desired. As adults age, they desire fewer options and value increased choice less when making decisions, possibly in an effort to reduce cognitive load and remain able to make the best choice (Reed, Mikels, & Simon, 2008; Mikels, Reed, & Simon, 2009). This preference shift is consistent with SST's predicted shift in decision making strategies, where avoiding regret and maximizing satisfaction (and thus satisfying emotional regulatory goals) can influence decisions (Mellers & McGraw 2001). Since preferences are clearly closely tied to what we chose when we make decisions, it is important to examine whether some of these age-related changes in decision making are tied to changes in preferences, not only for how many options they have, but for how they construct those preferences in the first place.

PREFERENCE CONSTRUCTION THROUGH CONSTRAINT SATISFACTION

Preference theory is currently split into competing theories centered around the idea that preferences are at the least, flexible (Slovic 1995), or at most completely temporary and invented (Johnson, Steffel, & Goldstein, 2005). This research has led to the theory of spreading of

alternatives, where we subconsciously alter our preferences at the point of choice to make a choice between two similar options. This spreading of results in the difference in the evaluation of attributes between the two choices being perceived as much larger than pre-choice data indicated initially. These changes are only stated to exist during the decision process and not afterward (Harmon-Jones & Mills 1999). Another competing model of choice and preference to that of stable preferences is based on the opposite idea: preferences are constantly constructed based on previous choices made, not necessarily the one ahead. It is called Preference Construction.

Preference Construction was proposed in a 1981 work on preferences (Tversky & Kahneman). Though theories such as Preference Construction and Spreading of Alternatives give a mechanism to the formation of preferences, they do not offer solid explanations as to the how and why of such mechanisms. The Constraint-Satisfaction model of Preference Construction proposes to do this by offering the following basic mechanism: We engage in systematic satisfaction of both internal and external constraints until a choice can be reached (Simon, Krawczyk & Holyoak 2004).

Research done by Simon et al. (2001) has provided support for this model in younger adults. Multiple studies have indicated that the theory is not domain specific, consistent across demographics, and in a hypothetical situation, has a very short effect length (Simon Krawczyk & Holyoak 2004, Simon & Holyoak 2002, Simon et al. 2007). More importantly, these studies have all demonstrated that not only do we construct new preferences after a choice, but our new preferences align to support the option we chose. These new preferences indicate new biases that were not present at the time of the choice and could be similar in effect to those that Henkel & Mather (2007) found when they induced false memories in participants by telling them they selected a choice other than the one they had actually chosen, and then had them recall past decisions erroneously. Participant biases, after the erroneous recall, were aligned to support the

choice participants believed they had made, instead of the one they actually had. Coupled with SSTs indication that we change strategies for making decisions as we age, which could indicate differing systems for satisfying constraints, age could impact preference construction.

Previous studies have not examined whether there are age differences in this decision making process. The work of Slovic (1995), Simon, Krawczyk & Holyoak (2004) were done strictly on younger adults, and Milch et al. (2009) worked with younger and middle age adults in group settings for group choices. Fortunately, the literature already offers a paradigm to replicate, where opinions are measured before and after a given choice, which is reasonably easy to adapt to different choice domains. As previously discussed, since decision making strategies and abilities change with age, it is reasonable to think that older age may result in a different manner of preference construction.

Our experiment examined whether older adults also demonstrate the basic preference construction patterns observed with younger adults in the work of Simon, Krawczyk & Holyoak (2004). Additionally, we explored whether older adults differ from younger adults in how they construct their preferences. Using the basic paradigm of Simon, Krawczyk & Holyoak (2004), we adapted it for a choice about vacations, so as to offer a salient choice to both younger and older adults. Collecting data on both the desirability of attributes as well as importance of attributes allow for a more thorough examination of any differences in process between younger and older adults. We predicted that older adults will follow the basic pattern of preference shift to support their choice, predicted by preference construction by constraint satisfaction, as there is no evidence to suggest that the theory does not apply to older adults. Moreover, we expect to see older adults' magnitude of change from pre-choice to post-choice be significantly stronger than that of younger adults, due to the increased focus on emotions by older adults and increased regulation after the choice.

Methods

Participants

Participants were 80 younger and 80 older adults from the Ithaca, NY area. The younger adults were undergraduate students from Cornell University, participating for extra credit. They had a mean age of 20.0 years old. The older adults were 65+ years old from the Ithaca, NY area and were contacted by phone and asked to participate in exchange for \$10. They had a mean age of 73.8 years old.

Materials

Three paper packets were used: A baseline test to assess preferences exhibited before a choice about vacations, a letter scramble distraction task, and a vacation decision task with post decision measures. These are all based on, and very similar to, the measures used in Simon, Krawczyk, & Holyoak (2004). The domain of vacations was chosen due to its effectiveness in younger adults in Dhar, Nowlis & Sherman (1999) and pilot testing indicated it was viewed with a similar importance and level of detail in older adults.

The baseline questionnaire (see attached example copy in appendix A) consisted of an instruction section asking the participants to imagine a scenario in which they had decided to take a vacation. While waiting to be given destination options, they were asked to evaluate vacation attributes that “might be included in vacation options.” The test consisted of 11 statements describing various vacation attributes that participants were asked to rate on a 10 point likert-type scale, ranging from -5 (highly undesirable) to +5 (highly desirable).

The objective of the measure was to assess the desirability of 8 vacation attributes, one positive and one negative, in four areas: Cost, Hotel, Sites to See, and Food. Each of the 8 elements appeared in one of the 11 statements, with the other 3 consisting of distracter attributes that had no bearing on the rest of the experiment. After finishing this part of the test, the

participants were instructed to rate the importance of each of the four dimensions on a scale of 0 (no weight) to 8 (maximum weight), as they would if they were included in a vacation option. The order of statements for both the desirability section and importance section were counterbalanced to control for order effects.

In the second part of the experiment, participants were presented with 4 strings of letters, each one at a time. Participants were given 2 minutes to work on each string and write down as many 3, or more, letter words as could be formed from the letters in the string. This task was given as a distraction task and was designed to garner no data in and of itself. It was designed to provide a buffer between the initial questionnaire and the decision and post decision questionnaire so as to prevent the initial questionnaire from influencing the answers on the second.

In the final packet (see attached example copy in appendix B), participants were given two vacation options: Lansford and Flaxton. The vacations were described as completely similar and desirable in climate, ease of travel and other areas. Participants were also informed that they had visited each location before and had been pleased with their experiences. The vacations were listed on the same page, along with their differing attributes, one each from the 4 different areas. They were split evenly, 2 positive and 2 negative: Flaxton had good hotels and good food, but no sites to see and was expensive, whereas Lansford had poor hotels and poor food but lots of sites to see and was inexpensive. The 8 attributes included were the same that were used in the baseline measure. In an effort to manipulate their choice to one town, one was given a 5th attribute of “good weather” and the other was given a “bad weather” attribute.

In the next section, participants were asked to choose the vacation they desired more and then to rate their confidence in that choice on a scale from 0 (minimum confidence) to 5 (maximum confidence). Participants were then asked to complete desirability evaluations for the eight attributes measured in the first test, as well as give importance ratings for the four

dimensions. The questions of importance and desirability were identical to those used in the first test.

Across two between-subjects conditions, the town that was associated with the “good weather” attribute was varied. For half of the participants, Flaxton had desirable weather, whereas the other half was told Lansford had desirable weather. No other attributes were changed.

Procedure

All participants completed the experiment in 3 phases. They first were asked to complete the first measure, which was then collected and replaced with the distraction task. The distraction task (instructions plus completion time) took 10 minutes. After the distraction task was completed, participants were given and asked to fill out the third measure before being allowed to leave.

Results

To analyze the data, we first looked to see if the weather manipulation was effective before looking into the confidence ratings and cleaning the data. After cleaning, we created and analyzed the F scores, the importance ratings, and created the combined F scores. Finally, we analyzed the difference scores, looking into the age differences in smaller groups of data.

The data were first analyzed to see if the weather manipulation (whether the town had good or bad weather) was predictive of the decision made. The weather manipulation was effective, in that 81.25% of the entire sample chose the town with the good weather attribute over the other town, $\chi^2(1, N=160)=62.50, p < .001$. The individual conditions analysis showed 82.5% of participants in the good weather Flaxton condition chose Flaxton, where 80% of participants in the Lansford condition chose Lansford. Broken down by age group, older adults chose the good weather associated town 80% of the time, whereas younger adults chose it 82.5% of the time. Confidence ratings in the vacation decisions were high, with older adults rating their

confidence at 4.22 out of 5 on average, and younger adults rating theirs at 4.04. These means were not significantly different. At this point, we removed the participants that did not chose the good weather town, so as to streamline analyses and allow us to use the analytical tools described by Holyoak & Simon (1999).

To examine preference changes using the methods of Simon, Krawczyk & Holyoak (2004), we next looked to the assessments of the 8 different attributes to see whether they shifted to align with their vacation decision. We rescaled the desirability ratings of those attributes onto a -1 to 1 scale, in order to later multiply them with the importance ratings on a similar scale. To create before and after scores for each participant reflecting their views on the desirability of Flaxton as a vacation destination, which we will refer to as *F scores*, we averaged the ratings of the 8 attributes, after multiplying each rating for the 4 attributes associated with Lansford by -1, thus reversing the scale for them. As a result of the scale reversal for Lansford's associated attributes, higher positive F scores indicate strong preferences for Flaxton's positive attributes and low preference for Lansford's positive attributes, with low, negative, F scores indicating the opposite.

F scores were analyzed first by a 2 (decision group) x 2 (test phase) x 2 (age group) ANOVA, which revealed a highly significant interaction by test phase and decision group, $F(1,128) = 66.77, p < .001$, but no significant interaction by age group. The mean F score of the Flaxton choosers was higher at posttest than at pretest and the mean F score of Lansford choosers was lower at posttest than pretest (See Figure 1). The interactions with age were not significant, but the three-way interaction of age, test phase, and decision group was marginally significant, $F(1,126) = 2.482, p < .118$. Given our focused predictions, we further explored the data through closer investigation of the changes in F score from pretest to posttest. First, we computed differences scores subtracting the pre F scores from the post F scores for each participant. Then we examined whether the older adults differed from the younger adults for each town separately.

Although the older adults did not differ from the younger adults in the Lansford condition, the difference scores of the older adults were higher than those of the younger adults in the Flaxton condition, $t(64)=-1.990$, $p=.051$. We then broke down the composite F score into 6 new sub F scores with smaller foci: One encompassing just the Flaxton associated attributes, one for the Lansford associated attributes, another for just the positive attributes of Flaxton, one for the negative attributes of Flaxton, one for the positive attributes associated with Lansford, and finally, one encompassing the negative attributes of Lansford. These numbers were compiled from the original data, linearly rescaled onto the same -1 to 1 scale as the F scores were, but were not subject to any flipping of scores. A higher score simply means a subject found the included attributes more desirable than if they had a lower score. To analyze the change in each area from pretest to posttest, each pair of sub F scores were translated into a single number indicating the difference between the posttest and pretest scores. To compare preference changes between the younger and older adults, a series of independent-samples t-tests were conducted. All of the following t-tests are one sided, as there is predicted directionality, namely, that difference scores for the older adults group will be higher than those of the younger adult group. The data is consistent with this predicted pattern. For all of the difference scores analyzed, please refer to table 1.

While older and younger adults in the Lansford condition did not differ significantly from each other in analysis of their overall F score difference score for the towns they approached significance in the difference scores for the smaller section of scores for positive Flaxton traits $t(62)=-1.385$, $p=.086$. Older and younger adults in the Flaxton condition approached significance between their total difference scores between each other for each town, where Lansford $t(64)=1.340$, $p=.093$ wasn't as close to significance as Flaxton $t(64)=-1.551$, $p=.063$. The sub F score set that was significant was the positive Flaxton traits $t(64)=-1.851$, $p=.035$ between age groups, the same sub F score set that was closest to significance in the Lansford

condition. The other sub F score difference scores that approached significance between the age groups were those of the negative Lansford attributes $t(64)=1.383, p=.086$.

Analysis continued with the importance ratings, which were rescaled linearly onto a 0 to 1 scale, with 1 carrying very high importance and 0 carrying none, to facilitate later combination with the attribute preference scores. The importance ratings (displayed by phase, age and area in figure 2) themselves did not yield significant differences between age groups, but 5 of the 8 areas rated (4 areas per town by two town conditions) for each younger and older adults were significantly different in the direction predicted by preference construction by constraint satisfaction, with the remaining 3 areas in each group trending in the predicted direction, but not achieving significance.

Lastly, we elected to combine the importance ratings and the attribute ratings into a single combined F score in an effort to have one measure. To do this, we multiplied each attribute by its associated importance score, and then averaged those 8 scores together to give one rating per person per phase. This rating was again on the -1 to 1 scale used earlier, where a higher positive number indicates preferences and weights aligned with Flaxton, and lower negative numbers indicate the same for Lansford. Age was not found to be a significant factor in these analyses, though patterns of pre-choice to post choice movement can be seen in figure 3.

Discussion

The current results indicate that older adults show a similar preference construction pattern to younger adults, as well as provide limited support for older adults displaying differences indicative of SST in their preference shifts. In general, both groups showed the same patterns of preference shifts to support the option they chose as was previously displayed in other work (Simon, Krawczyk & Holyoak 2004, Simon et al. 2007). Preferences shifted to both support the town chosen, as well as cease supporting the town not chosen, as demonstrated by the F Scores rising from the pretest to the posttest in the Flaxton group, the F scores decreasing

in the Lansford group. This supports our hypothesis that older adults would shift their preferences to match their choice and show similar patterns of preference construction to that of younger adults. Importance ratings and combined F scores for older adults also mirrored the pattern of the younger adults in the study, lending further evidence to the notion that the effects of preference construction are demonstrated in older adults as well as younger adults.

Possible age effects are indicated most prominently by the difference scores compiled for the younger and older adults in the Flaxton group. The significant score in the sub F score difference concerning Flaxton's positive attributes, as well as the same difference sub F score in the Lansford condition, which was that town group's sub F score closest to significance, could suggest that older adults are more positive about Flaxton's positive points after their decisions, especially after choosing Flaxton. While this is not closely mirrored in other parts of our study, such as the positive traits of Lansford or the negative areas of either town, the current results do provide partial support for a positivity effect in preference construction. This is, therefore, a weak indication of support for our hypothesis of significantly different difference scores between younger and older adults.

There are a few factors that may have influenced the ability of this study to detect significant differences between the age groups thus hindering the ability of this study to accurately assess the effects of age on decision making and preference construction. First, it is certainly possible that the attributes were not viewed similarly by younger and older adults, despite our pilot testing suggesting that they were. Obviously, as decision making changes with age, we could expect some difference in opinions of vacation options. Also, since this was a hypothetical vacation, it is possible that it was viewed with less importance than a normal decision might be. Second, it is possible that preference construction effects drowned out age effects. Certainly in the more inclusive measures in the analyses, there were multiple numbers creating a final one for measurement, which definitely has the potential to water down more

subtle effects. This is consistent with the significance and marginal significance of some of the smaller measures in the examined F score difference scores. Finally, we find it doubtful that issues of domain or procedure were likely causes of the lack of effect, as both the general method and domain had been used in previous research (Simon, Krawczyk & Holyaok 2004, Dhar, Nowlis & Sherman 1999) effectively.

The study seems to suggest that Preference Construction is a robust phenomenon across multiple domains and age groups, while more research is needed to determine how age may interact with it on a more detailed level. It would be very revealing if research was conducted on a real choice of substantial importance and cost (such as a car purchase) and the preferences before and after. Also, it would be useful for future research to determine if the temporal length of the effect differs for older versus younger adults. With the many directions the fields of preference construction and SST both branch out in, it will be very interesting to see if, and where, they both intersect in the future.

References

- Carstensen, L. (2006). The Influence of a Sense of Time on Human Development. *Science, 312*, 1913-1915
- Carstensen, L., & Mikels, J. (2005). At the Intersection of Emotion and Cognition: Aging and the Positivity Effect. *Current Directions in Psychological Science, 14*, 117-121.
- Dhar, R., Nowlis, S., & Sherman, S. (1999). Comparison effects on preference construction. *Journal of Consumer Research, 26*(3), 293-306.
- Harmon-Jones, E., & Mills, J. (1999). An introduction to cognitive dissonance theory and an overview of current perspectives on the theory. *Cognitive dissonance: Progress on a pivotal theory in social psychology* (pp. 3-21). Washington, DC US: American Psychological Association
- Holyoak, K., & Simon, D. (1999). Bidirectional reasoning in decision making by constraint satisfaction. *Journal of Experimental Psychology: General, 128*(1), 3-31.
- Johnson, E., Steffel, M., & Goldstein, D. (2005). Making Better Decisions: From Measuring to Constructing Preferences. *Health Psychology, 24*(4, Suppl), S17-S22.
- Löckenhoff, C., & Carstensen, L. (2007). Aging, emotion, and health-related decision strategies: Motivational manipulations can reduce age differences. *Psychology and Aging, 22*, 134-146.
- Mather, M., Carstensen, L., (2005). Aging and motivated cognition: the positivity effect in attention and memory. *Trends in Cognitive Sciences, 9*, 496-502.
- Mather, M., & Johnson, M. (2000). Choice-supportive source monitoring: Do our decisions seem better to us as we age?. *Psychology and Aging, 15*, 596-606.
- Mellers, B., & McGraw, A. (2001). Anticipated emotions as guides to choice. *Current Directions in Psychological Science, 10*, 210-214.

- Mikels, J., Reed, A., & Simon, K. (2009). Older adults place lower value on choice relative to young adults. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences, 64B*, 443-446.
- Milch, K., Weber, E., Appelt, K., Handgraaf, M., & Krantz, D. (2009). From individual preference construction to group decisions: Framing effects and group processes. *Organizational Behavior and Human Decision Processes, 108*, 242-255.
- Reed, Andrew E., Mikels, Joseph A., Simon, Kosali I. (2008) Older adults prefer less choice than younger adults. *Psychology and Aging, 23*, 671-675.
- Simon, D., & Holyoak, K. (2002). Structural dynamics of cognition: From consistency theories to constraint satisfaction. *Personality and Social Psychology Review, 6*, 283-294.
- Simon, D., Krawczyk, D., Bleicher, A., & Holyoak, K. (2008). The transience of constructed preferences. *Journal of Behavioral Decision Making, 21*, 1-14.
- Simon, D., Krawczyk, D., & Holyoak, K. (2004). Construction of Preferences by Constraint Satisfaction. *Psychological Science, 15*, 331-336.
- Simon, D., Pham, L., Le, Q., & Holyoak, K. (2001). The emergence of coherence over the course of decision making. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 27*, 1250-1260.
- Slovic, P. (1995). The construction of preference. *American Psychologist, 50*, 364-371.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science, 211*, 453-458.
- U.S. Census Bureau. (2005). *65+ In the United States: 2005*.

Table 1

Flaxton Group Difference Scores						
Traits Included	Age Group	N	Mean	Std. Dev.	Std. Error Mean	Sig. (2-tailed)
All Flaxton	Young	33	.0250	.16322	.02841	.126
	Old	33	.0962	.20711	.03605	
All Lansford	Young	33	-.0303	.19037	.03314	.185
	Old	33	-.0879	.15714	.02735	
Positive Flaxton	Young	33	-.0803	.20613	.03588	.069
	Old	33	.0061	.17128	.02982	
Positive Lansford	Young	33	-.1485	.24510	.04267	.566
	Old	33	-.1818	.22424	.03904	
Negative Flaxton	Young	33	.1303	.23912	.04163	.457
	Old	33	.1864	.35822	.06236	
Negative Lansford	Young	33	.0879	.26547	.04621	.171
	Old	33	.0061	.21204	.03691	

Lansford Group Difference Scores						
Traits Included	Age Group	N	Mean	Std. Dev.	Std. Error Mean	Sig. (2-tailed)
All Flaxton	Young	33	-.1682	.21860	.03805	.824
	Old	31	-.1806	.22718	.04080	
All Lansford	Young	33	.1030	.12559	.02186	.714
	Old	31	.1177	.18954	.03404	
Positive Flaxton	Young	33	-.1727	.21400	.03725	.171
	Old	31	-.1097	.13989	.02513	
Positive Lansford	Young	33	-.1636	.32483	.05654	.343
	Old	31	-.2516	.40977	.07360	
Negative Flaxton	Young	33	.0212	.15362	.02674	.978
	Old	31	.0194	.35630	.06399	
Negative Lansford	Young	33	.1848	.17522	.03050	.323
	Old	31	.2161	.21307	.03827	

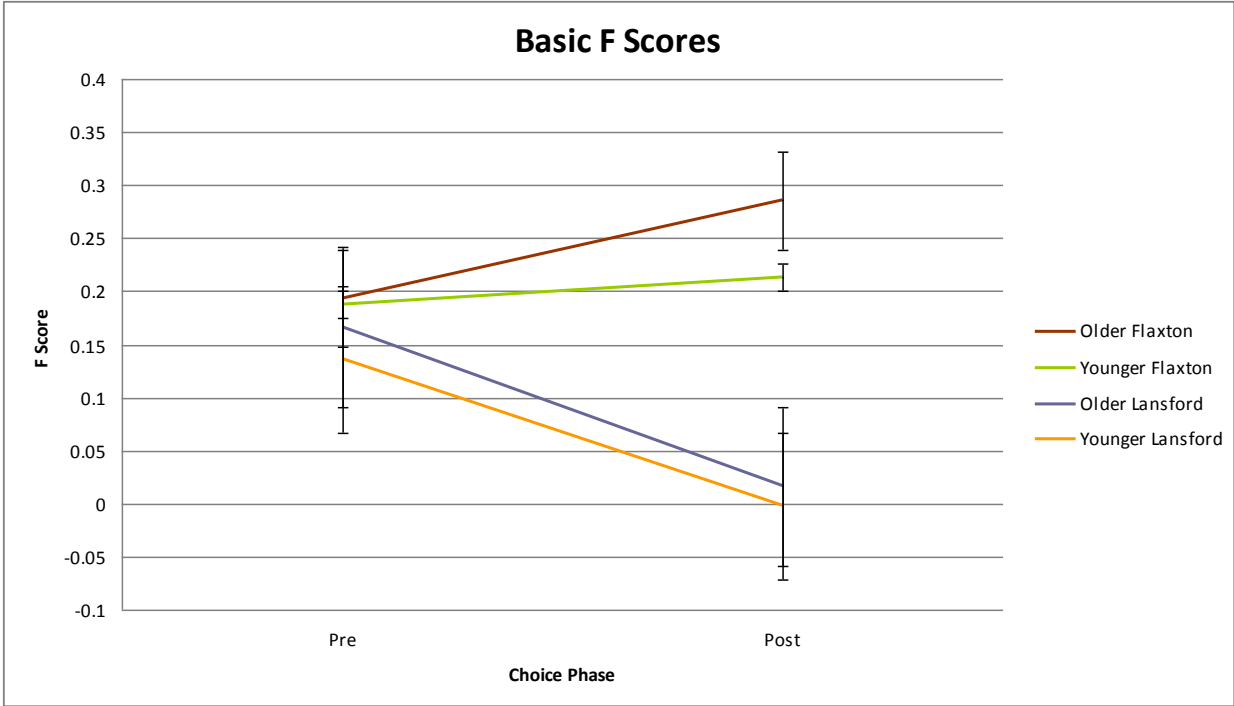


Figure 1. Basic F Score Patterns. Error bars represent one standard error.

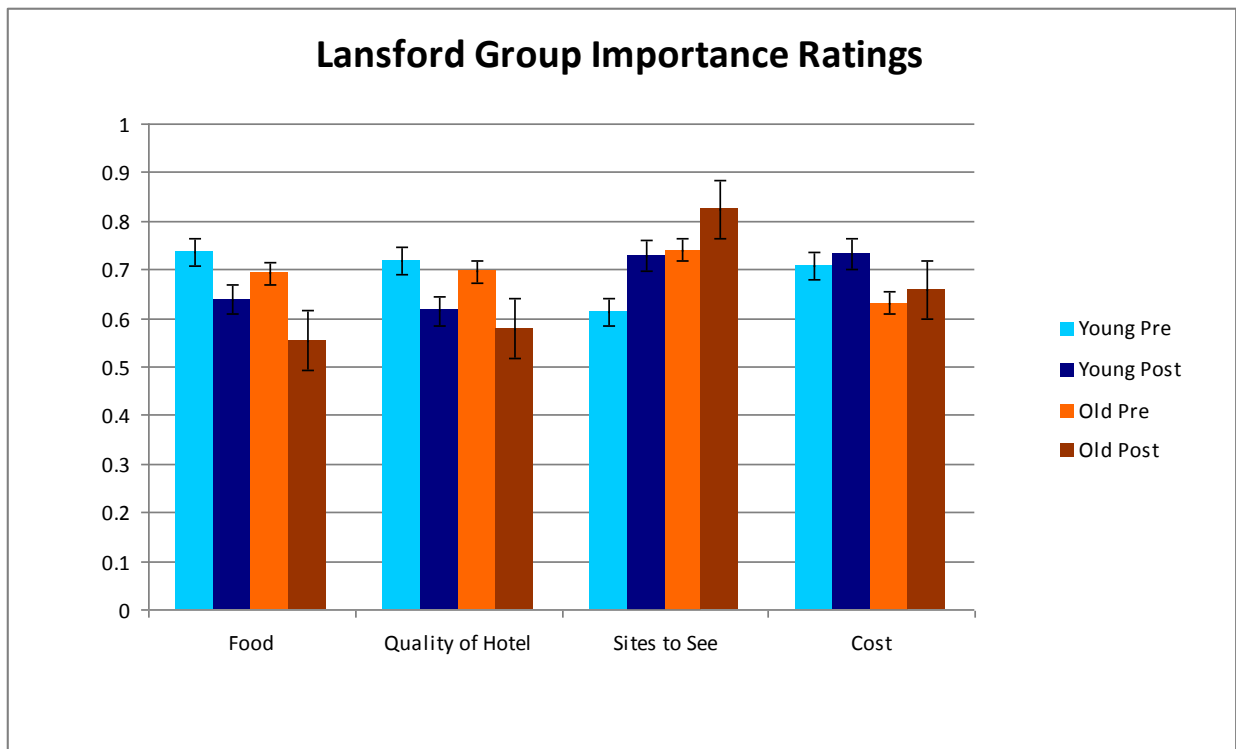
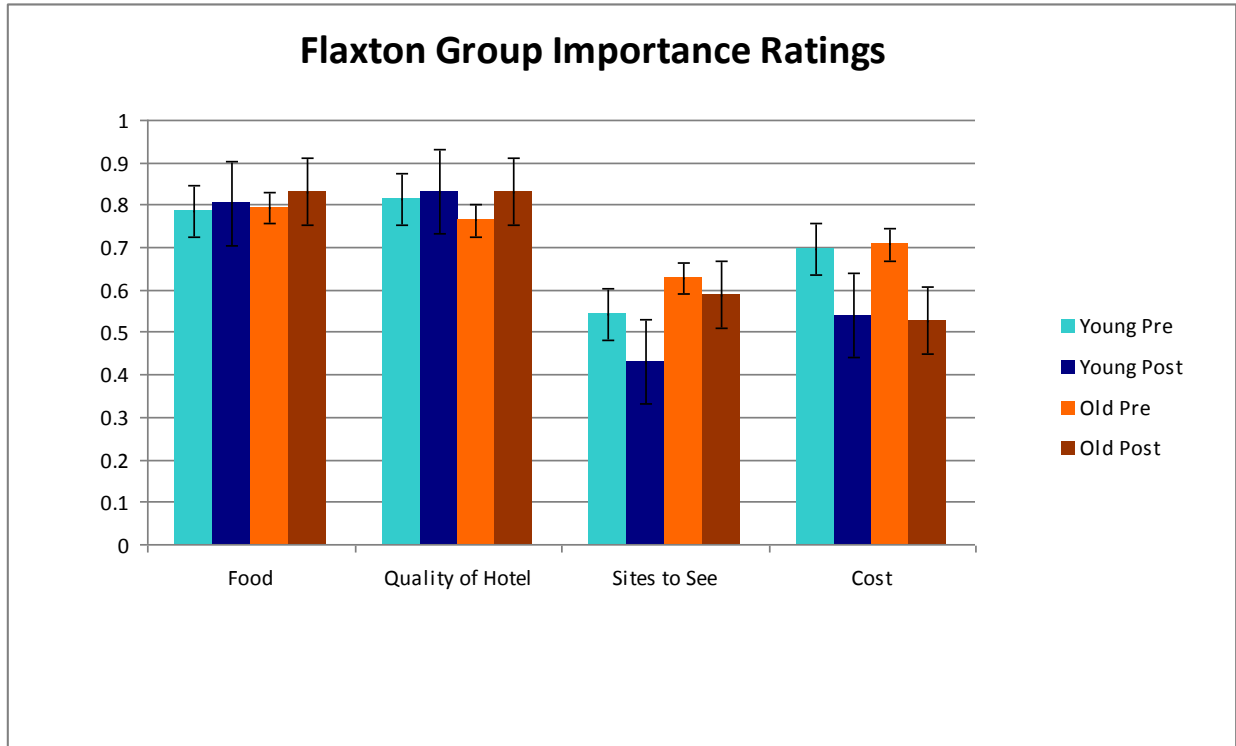


Figure 2. Importance Ratings by Town Group and Age Group. Bars labeled “Pre” represent pre-choice data, whereas bars labeled “Post” represent post-choice data. Error bars are one standard error.

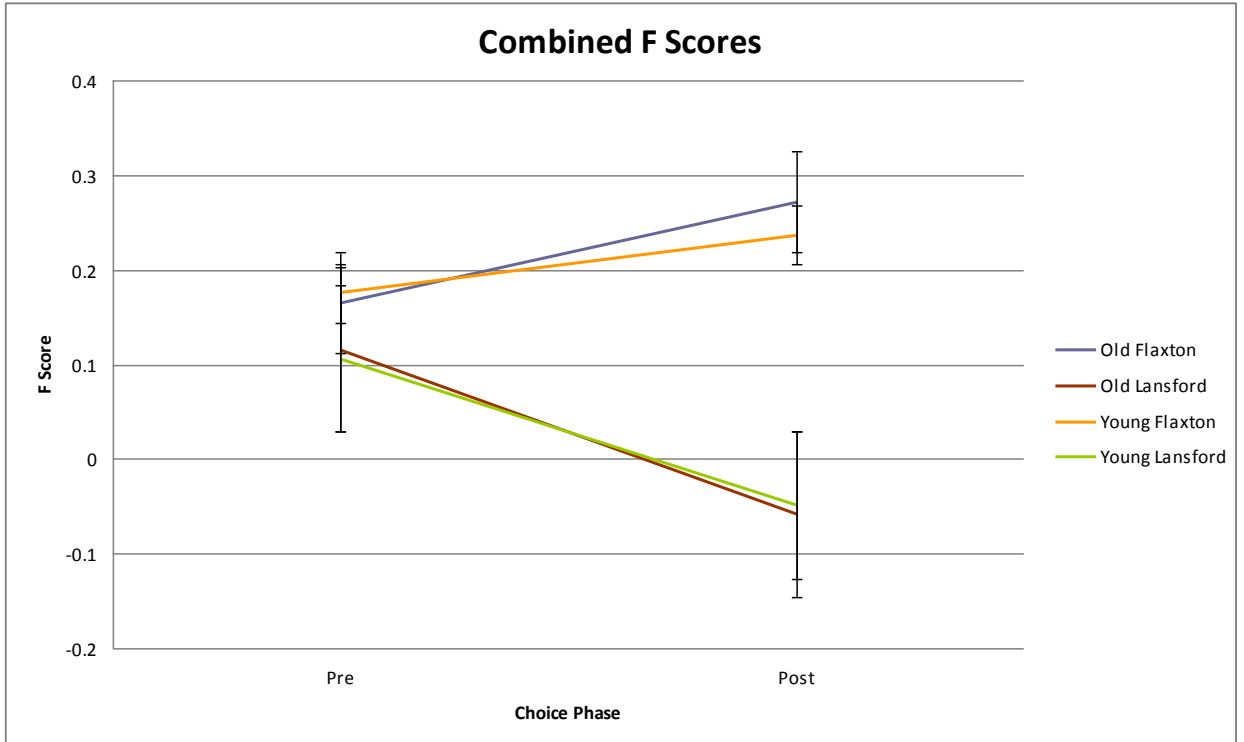


Figure 3. Combined F Score Patterns. Error bars represent one standard error.

Appendix A

Sample Baseline Questionnaire

LOOKING FOR A VACATION

Imagine that you have decided to take a vacation. You have thought about possible locations and are hoping to narrow down your choices to find the best one.

In this experiment you will be asked to state how you feel about an assortment of aspects that might be included in vacations.

Specifically, you will be asked to state how desirable or undesirable you find each aspect. Use the following scale to indicate how desirable each aspect is to you:

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable				slightly desirable		moderately desirable	highly desirable

For example: use the rating of -5 (highly undesirable) when you have a strong negative preference for an aspect. Use the rating of +3 (moderately desirable) when you have a moderately positive preference for an aspect. You are encouraged to use the full range of the scale.

There are no right or wrong answers to these questions. Please state how you personally feel about these aspects as if you were evaluating them in the context of making a real decision about your future vacation. You are not expected to have any special knowledge.

You might find that the information given to you is less complete than you would like to have; nonetheless, respond as best as you can given the available information.

The issues are unrelated, so simply consider each one independently.

Please answer the following questions using the provided scales. You are encouraged to use the full range of the scale:

1. A vacation site is very accessible, serviced by all manner of modern comfortable travel, including air, rail and car travel.

Please state how desirable transportation choice is to you.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable				slightly desirable		moderately desirable	highly desirable

2. The hotel at a vacation location is somewhat shabby and the service is poor. Please state how desirable a poor quality hotel is to you.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable				slightly desirable		moderately desirable	highly desirable

3. The food at a given vacation spot is very diverse and ingredients are fresh and varied. The resulting cuisine is popular and tasty. Please state how desirable it is to have good food.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable				slightly desirable		moderately desirable	highly desirable

4. A vacation spot has no sites and famous landmarks to see and visit. Please state how desirable no sites to see are.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable				slightly desirable		moderately desirable	highly desirable

5. The cost of a given vacation is more expensive than usual. Please state how desirable an expensive vacation is to you.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable				slightly desirable		moderately desirable	highly desirable

6. There are an abundance of famous sites and popular landmarks to visit at a given vacation destination. Please state how desirable an abundance of sites to see are.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable				slightly desirable		moderately desirable	highly desirable

7. The shopping options at a given vacation site are inexpensive and varied, offering a great mix of local culture and modern items. Please state how desirable good shopping is to you.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable				slightly desirable		moderately desirable	highly desirable

8. The hotel at a certain vacation spot is clean and the staff is friendly.
Please state how desirable a good quality hotel is to you.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable				slightly desirable		moderately desirable	highly desirable

9. The food at a given vacation spot is rather narrow and the ingredients aren't very fresh or varied. The resulting cuisine is rather bland and poor.

Please state how desirable it is to have bad food.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable				slightly desirable		moderately desirable	highly desirable

10. You have no friends or family in the vacation area.

Please state how desirable a lack of acquaintances in the area is to you.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable				slightly desirable		moderately desirable	highly desirable

11. A vacation spot is less expensive than your usual vacation.

Please state how desirable an inexpensive vacation is to you.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable				slightly desirable		moderately desirable	highly desirable

12. In this question you are requested to indicate how you prioritize among different aspects that might be included in a vacation option. You will be presented with four aspects and asked to rate how important each aspect is in the overall context of the vacation option.

Let us explain what we mean using the following example: Haley and Debbie have both decided to go out to a restaurant for dinner and have two choices. Restaurant A is pretty trendy and is located in poor section of town; restaurant B is somewhat less trendy and is located in a upscale section of town. Both Haley and Debbie have similar preferences with regard to these two aspects; both of them prefer going to a trendy restaurant, and they both prefer dining in a upscale section of town. However, Haley and Debbie prioritize these preferences differently. That is, they assign different levels of importance to each of these aspects. Haley puts more weight on the restaurant's trendiness and less on how upscale the area is, whereas Debbie assigns more importance to how upscale the section of town is than to the restaurant's trendiness. It can be expected that, all other things being equal, Haley will choose the first restaurant and Debbie will choose the second.

You are now requested to indicate how you would prioritize among four aspects that could be included in a vacation option. You will be asked to indicate how much weight you would assign to each of the following four aspects in the overall context of choosing a vacation:

The Quality of Hotel. You are told that the quality can vary from shabby with poor service to clean with a friendly staff.

The Food. The local food can vary from limited and bland to fresh, varied and flavorful.

The Cost. The cost can vary from more expensive to less expensive than normal.

The Sites to See. The amount of sites to see and popular landmarks can vary from few to many.

Use the provided scale to report the weight of each aspect:

0	1	2	3	4	5	6	7	8
no		low		moderate		high		maximum
weight		weight		weight		weight		weight

When you are done reading, please turn to the next page.

Please state the relative weight you would assign each of the aspects in the overall context of choosing a vacation (circle one number). You are encouraged to use the full range of the scale:

1. The Food

0	1	2	3	4	5	6	7	8
no		low		moderate		high		maximum
weight		weight		weight		weight		weight

2. The Quality of Hotel

0	1	2	3	4	5	6	7	8
no		low		moderate		high		maximum
weight		weight		weight		weight		weight

3. The Sites to See

0	1	2	3	4	5	6	7	8
no		low		moderate		high		maximum
weight		weight		weight		weight		weight

4. The Cost

0	1	2	3	4	5	6	7	8
no		low		moderate		high		maximum
weight		weight		weight		weight		weight

Appendix B

Sample Choice and Post-choice Questionnaire

CHOOSING YOUR VACATION

General Instructions

In this experiment you will be asked to play the role of a person who has just decided to take a vacation. You are currently looking for a vacation you would like to take.

You have just found two interesting vacation options, Flaxton and Lansford. The two options are similar in terms of their size and reputation, and your prospects for an enjoyable time seem good at both places. You have already been to both towns for short stays before, and have met the locals. You found both places to be stimulating and pleasant.

After receiving more information about the two vacation sites, you will be asked to decide which one to visit.

When you are done reading, please turn to the next page.

You will now be given additional information about the two vacation options.

Please consider all the information regarding the vacation options carefully. Try to imagine how you would feel if you were really in the described situation, facing a choice that will strongly influence your enjoyment of your vacation.

Take as much time as you feel you need. You will be able to look back at this information at any time.

Flaxton

Flaxton has a wonderful climate, usually having great weather year round.

Flaxton is a reasonably expensive place to visit, so you would spend more money to vacation here than usual.

The food at Flaxton is very diverse and ingredients are fresh and varied. The resulting cuisine is popular and tasty.

Flaxton has no sites and famous landmarks to see and visit.

The hotel at Flaxton is clean and the staff is friendly.

Lansford

Lansford has a poor climate, usually having bad weather year round.

Lansford is a reasonably inexpensive place to visit, so you would spend less money to vacation here than usual.

The food at Lansford is rather narrow and the ingredients aren't very fresh or varied. The resulting cuisine is rather bland and poor.

There are an abundance of famous sites and popular landmarks to visit at Lansford.

The hotel at Lansford is somewhat shabby and the service is poor.

When you are done reading, please turn to the next page.

At this point you have all the available information, and you are now asked to make your decision. Take your time and feel free to look back at the information provided.

Please consider all pros and cons of both vacation options carefully. Try to make this decision as if you were really in the described situation, and were facing a choice that will strongly influence your enjoyment of your upcoming vacation.

When you have made your decision, please put a check on the appropriate line (check one line).

Your Decision

I choose to vacation at:	Flaxton	_____
	Lansford	_____

Rate your confidence that you have made the best possible decision (circle one number):

1	2	3	4	5
low		medium		high

You will now be requested to state your preferences towards the aspects of the vacation options provided by Flaxton and Lansford. Specifically, you are requested to state how desirable or undesirable you find each of these aspects. There are no right or wrong answers to these questions. Please state your subjective preferences.

You are requested to answer the following questions using the provided scales. You are encouraged to use the full range of the scale:

1. The hotel Lansford is somewhat shabby and the service is poor.
Please state how desirable a poor quality hotel is to you.

-5	-4	-3	-2	-1	1	2	3	4	5
highly	moderately	slightly	slightly	slightly	slightly	slightly	moderately	moderately	highly
undesirable	undesirable	undesirable	undesirable	undesirable	desirable	desirable	desirable	desirable	desirable

2. The food at Flaxton is very diverse and ingredients are fresh and varied. The resulting cuisine is popular and tasty.
Please state how desirable it is to have good food.

-5	-4	-3	-2	-1	1	2	3	4	5
highly	moderately	slightly	slightly	slightly	slightly	slightly	moderately	moderately	highly
undesirable	undesirable	undesirable	undesirable	undesirable	desirable	desirable	desirable	desirable	desirable

3. Flaxton has no sites and famous landmarks to see and visit.

Please state how desirable no sites to see are.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable	slightly undesirable	slightly undesirable	slightly desirable	slightly desirable	moderately desirable	moderately desirable	highly desirable

4. The cost of visiting Flaxton is more expensive than usual.

Please state how desirable an expensive vacation is to you.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable	slightly undesirable	slightly undesirable	slightly desirable	slightly desirable	moderately desirable	moderately desirable	highly desirable

5. There are an abundance of famous sites and popular landmarks to visit at Lansford.

Please state how desirable an abundance of sites to see are.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable	slightly undesirable	slightly undesirable	slightly desirable	slightly desirable	moderately desirable	moderately desirable	highly desirable

6. The hotel at Flaxton is clean and the staff is friendly.

Please state how desirable a good quality hotel is to you.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable	slightly undesirable	slightly undesirable	slightly desirable	slightly desirable	moderately desirable	moderately desirable	highly desirable

7. The food at Lansford is rather narrow and the ingredients aren't very fresh or varied. The resulting cuisine is rather bland and poor.

Please state how desirable it is to have bad food.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable	slightly undesirable	slightly undesirable	slightly desirable	slightly desirable	moderately desirable	moderately desirable	highly desirable

8. Lansford is less expensive to visit than your usual vacation

Please state how desirable an inexpensive vacation is to you.

-5	-4	-3	-2	-1	1	2	3	4	5
highly undesirable	moderately undesirable	slightly undesirable	slightly undesirable	slightly undesirable	slightly desirable	slightly desirable	moderately desirable	moderately desirable	highly desirable

When you are done responding, please turn to the next page.

You have just completed stating how desirable each aspect of the vacation options is to you. In making the decision you probably had some priority among each of the aspects of the decision, that is, you assigned different weights to them. You will next be requested to report how much weight you placed on each aspect in the overall context of your decision.

Recall the example of Haley and Debbie, who have both decided to go out to a restaurant for dinner and have two choices. Restaurant A is pretty trendy and is located in poor section of town; restaurant B is somewhat less trendy and is located in a upscale section of town. Both Haley and Debbie have similar preferences with regard to these two aspects; both of them prefer going to a trendy restaurant, and they both prefer dining in a upscale section of town. However, Haley and Debbie prioritize these preferences differently. That is, they assign different levels of importance to each of these aspects. Haley puts more weight on the restaurant's trendiness and less on how upscale the area is, whereas Debbie assigns more importance to how upscale the section of town is than to the restaurant's trendiness. It can be expected that, all other things being equal, Haley will choose the first restaurant and Debbie will choose the second.

You are now requested to state the weights you assigned each aspect of the options provided by Flaxton and Lansford.

Use the provided scale to report the weight:

0	1	2	3	4	5	6	7	8
no		low		moderate		high		maximum
weight		weight		weight		weight		weight

For example: use the rating of 2 (low weight) when the respective aspect was weakly important to your decision. Use the rating of 8 (maximal weight) when the respective aspect was extremely important in the overall context of your decision.

When you are done reading, please turn to the next page.

Please state the weight you assigned each of the aspects in the overall context of your decision (circle one number). You are encouraged to use the full range of the scale:

1. The Cost

0	1	2	3	4	5	6	7	8
no		low		moderate		high		maximum
weight		weight		weight		weight		weight

2. The Quality of Hotel

0	1	2	3	4	5	6	7	8
no		low		moderate		high		maximum
weight		weight		weight		weight		weight

3. The Food

0	1	2	3	4	5	6	7	8
no		low		moderate		high		maximum
weight		weight		weight		weight		weight

4. The Sites to See

0	1	2	3	4	5	6	7	8
no		low		moderate		high		maximum
weight		weight		weight		weight		weight

You have now completed the experiment

THANK YOU FOR YOUR PARTICIPATION!